

Please delete the heading beginning at page 46, line 10.

IN THE CLAIMS:

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Cancel claims 1-10.

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Amend claims 14-15 as follows:

14. (Twice Amended) A recorder for recording data on a recording medium, comprising
a first data output device which outputs sample data, the sample data being formed by
sampling information to be recorded at a given cycle and quantizing the thus-sampled data into data
having a predetermined number of bits;

15
a re-quantization device which re-quantizes the data output from the first data output device
into data whose number of bits is smaller than the predetermined number of bits;

a first writing device which records data on a predetermined recording layer of the recording
medium on the basis of the data, which has been re-quantized by the re-quantization device, at a
predetermined recording density;

a second data output device which outputs data, the data being produced by sampling the
information to be recorded at a cycle shorter than the predetermined cycle and quantizing the thus-
sampled information into data having a predetermined number of bits; and

a second writing device for recording data on the other recording layer of the recording
medium on the basis of the data, which have been output from the second data output device, at a

recording density higher than that at which the first writing device records data.

15. (Twice Amended) A recorder for recording data on a recording medium, comprising:
a filtering device which limits the bandwidth of information to be recorded to a predetermined frequency bandwidth;
a conversion device which sample the data output from the filtering device at a predetermined cycle and quantizes the thus-sampled data into data having a predetermined number of bits;
a diminishing device which performs a diminishing operation on the data output from the conversion device;
a re-quantization device which re-quantizes the data output from the diminishing device into data whose number of bits is smaller than the predetermined number of bits;
a first writing device which records data on a predetermined recording layer of the recording medium on the basis of the data, which has been re-quantized by the re-quantization device, at a predetermined recording density; and
a second writing device for recording data on the other recording layer of the recording medium on the basis of the data, which have been output from the conversion device, at a recording density higher than that at which the first writing device records data.

Add the following new claims ²⁵⁻³⁸ ~~16-29~~.

15.
16.

(Added) A recording medium having a plurality of signal recording layers, wherein

first data are recorded on one of the signal recording layers, and data relevant to the first data are recorded on the other signal recording layer at a recording density higher than that at which the first data are recorded; and

the relevant data include data based on data sampled at intermediate times between sampling times used for generating the first data.

26.

17. (Added) The recording medium as defined in claim 16, wherein the recording density corresponds to a recording density with respect to the longitudinal direction of a recording track and/or a recording density with respect to the widthwise direction of the recording track.

27.

18. (Added) The recording medium as defined in claim 16, wherein the relevant data complement the first data.

28.

19. (Added) The recording medium as defined in claim 16, wherein the relevant data are intended to improve the quality of the first data further.

29.

20. (Added) A recording medium having a plurality of signal recording layers, wherein first data are recorded on one of the signal recording layers, and data relevant to the first data are recorded on the other signal recording layer at a recording density higher than that at which the first data are recorded; and

the first data are recorded as data having a predetermined number of bits after having been

re-quantized, and the relevant data include differential data pertaining to a difference between the first data and at least a portion of the data on the basis of which the first data have been re-quantized into a predetermined number of bits.

30.
21. (Added) The recording medium as defined in claim 20, wherein the recording density corresponds to a recording density with respect to the longitudinal direction of a recording track and/or a recording density with respect to the widthwise direction of the recording track.

31.
22. (Added) The recording medium as defined in claim 20, wherein the relevant data complement the first data.

32.
23. (Added) The recording medium as defined in claim 20, wherein the relevant data are intended to improve the quality of the first data further.

33.
24. (Added) A recording medium having a plurality of signal recording layers, wherein first data are recorded on one of the signal recording layers, and data relevant to the first data are recorded on the other signal recording layer at a recording density higher than that at which the first data are recorded; and

the relevant data comprise data whose frequency components are higher frequency than the frequency components of the first data.

34.
25. (Added) The recording medium as defined in claim ³³24, wherein the recording density corresponds to a recording density with respect to the longitudinal direction of a recording track and/or a recording density with respect to the widthwise direction of the recording track.

35.
26. (Added) The recording medium as defined in claim ³³24, wherein the relevant data complement the first data.

36.
27. (Added) The recording medium as defined in claim ³³24, wherein the relevant data are intended to improve the quality of the first data further.

37.
28. (added) A recording medium having a plurality of signal recording layers, wherein first data are recorded on one of the signal recording layers, and data relevant to the first data are recorded on the other signal recording layer at a recording density higher than that at which the first data are recorded;

the relevant data are higher in quality than the first data and can be played back solely; and

the relevant data are sampled at a cycle shorter than that at which the first data have been

sampled.

38.
29. (Added) The recording medium as defined in claim ³⁷28, wherein the relevant data are wider in frequency bandwidth than the first data.